

## PATENT COOPERATION TREATY



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INTERNATIONAL PRELIMINARY EXAMINATION REPORT  
(PCT Article 36 and Rule 70)

Applicant's or agent's file reference K 2003 PCT		<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/US 03/40033	International filing date (day/month/year) 16.12.2003	Priority date (day/month/year) 16.12.2002	
International Patent Classification (IPC) or both national classification and IPC G02B3/00			
Applicant 3M INNOVATIVE PROPERTIES COMPANY			
<p>1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 6 sheets, including this cover sheet.</p> <p><input type="checkbox"/> This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).</p> <p>These annexes consist of a total of      sheets.</p>			
<p>3. This report contains indications relating to the following items:</p> <p>I <input checked="" type="checkbox"/> Basis of the opinion</p> <p>II <input type="checkbox"/> Priority</p> <p>III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p>IV <input type="checkbox"/> Lack of unity of invention</p> <p>V <input checked="" type="checkbox"/> Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p>VI <input type="checkbox"/> Certain documents cited</p> <p>VII <input type="checkbox"/> Certain defects in the international application</p> <p>VIII <input type="checkbox"/> Certain observations on the international application</p>			
Date of submission of the demand  17.06.2004		Date of completion of this report  22.12.2004	
Name and mailing address of the international preliminary examining authority:  European Patent Office - Gitschiner Str. 103 D-10958 Berlin Tel. +49 30 25901 - 0 Fax: +49 30 25901 - 840		Authorized Officer  Verdrager, V Telephone No. +49 30 25901-648 	

**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/US 03/40033

**I. Basis of the report**

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17))*):

**Description, Pages**

1-13 as originally filed

**Claims, Numbers**

1-13 as originally filed

**Drawings, Sheets**

1/6-6/6 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- ☐ the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).  
☐ the language of publication of the international application (under Rule 48.3(b)).  
☐ the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.  
☐ filed together with the international application in computer readable form.  
☐ furnished subsequently to this Authority in written form.  
☐ furnished subsequently to this Authority in computer readable form.  
☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.  
☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- ☐ the description, pages:  
☐ the claims, Nos.:  
☐ the drawings, sheets:

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5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

*(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)*

6. Additional observations, if necessary:

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

**1. Statement**

Novelty (N)	Yes: Claims	10,12,13
	No: Claims	1-9,11
Inventive step (IS)	Yes: Claims	
	No: Claims	10,12,13
Industrial applicability (IA)	Yes: Claims	1-13
	No: Claims	

**2. Citations and explanations**

**see separate sheet**

**Re Item V**

**Reasoned statement with regard to novelty, inventive step or industrial applicability;  
citations and explanations supporting such statement**

**1. Cited documents**

- 1.1 The following documents are referred to in this communication; the numbering will be adhered to in the rest of the procedure:

D1: US-A-5 521 725 (ZIMMERMAN SCOTT M ET AL) 28 May 1996 (1996-05-28)  
D2: WO-A-02 43 937 (WESSLING M ET AL) 6 June 2002 (2002-06-06)  
D3: PATENT ABSTRACTS OF JAPAN vol. 0122, no. 43 (P-728), 9 July 1988  
(1988-07-09) & JP 63 034501 A (CANON INC), 15 February 1988 (1988-02-15)

**2. Novelty**

- 2.1 The present application does not meet the requirements of Article 33(2) PCT, because the subject-matter of claims 1-9,11 is not new.
- 2.2 Document D1 discloses (the references in parentheses applying to this document): a lens array sheet comprising a transparent base material (82), a plurality of light-receiving sections each consisting of a transparent right frustum (28) which is provided on the surface of said base material and is tapered outwardly from said base material, and a plurality of condensing lenses (80) disposed on the back of said base material so as to face the respective light-receiving sections (figure 2A), wherein the side face of said right frustum forms a taper angle larger than 0° and less than 15° with the central axial line of said right frustum (column 6, lines 18-22), and an aspect ratio (H/D) which is a proportion of the height (H) of said right frustum to the minimum length (D) of the cut surface of said right frustum is larger than 0 and no more than 10 (figures 2A,7; column 6, lines 25-30).

The subject-matter of claim 1 is therefore not new (Article 33(2) PCT).

- 2.3 D1 discloses the additional features introduced by dependent claims 2-8:
- claim 2,4: light-receiving sections/condensing lenses integrated with the base material (column 7, lines 23-27)
  - claim 3: pyramid frustum (column 5, lines 46-67; column 8, lines 28-51)
  - claim 5: spherical lenses, non-spherical lenses (column 7, lines 37-42)
  - claim 6: lenticular lens (column 7, lines 37-42; column 5, line 46 - column 6, line 8)
  - claim 7: energy radiation curing resin (column 4, lines 59-65; column 7, lines 31-36)
  - claim 8: acrylic resin (column 4, lines 59-65)

- 2.4 Document D2 discloses:  
a molding method (D2: page 14, line 45 - page 14, line 12) comprising the steps of: coating the inner surface of a meltable mold with fluorinated material (D2: page 15, line 8); charging energy radiation curing resin into said mold; applying energy radiation to said energy radiation curing resin (D2: page 15, line 9); and melting said mold (D2: page 14, lines 45-54).

The subject-matter of claims 9 and 11 is therefore not new (Article 33(2) PCT).

### **3. Inventive step**

- 3.1 The present application does not meet the requirements of Article 33(3) PCT, because the subject-matter of claims 10,12,13 does not involve an inventive step.
- 3.2 The features of claims 10 and 12 (fusible and water soluble materials) is merely one of several straightforward possibilities from which the skilled person would select, in accordance with circumstances, without the exercise of inventive skill, in order to solve the problem posed (see also D3: abstract).
- 3.3 The molding method for micro or nano sized structures is described in document D2 as providing the same advantages as in the present application. The skilled person would therefore regard it as a normal option to use this method described in document D2 in order to mold the lens array sheet of claim 1. The subject-matter of claim 13 therefore does not involve an inventive step (Article 33(3) PCT).

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**4. Formal aspects**

- 4.1 Independent claims 1 and 9 are not in the two-part form in accordance with Rule 6.3(b) PCT.
- 4.2 The features of the claims are not provided with reference signs placed in parentheses (Rule 6.2(b) PCT).
- 4.3 The document D1 is not identified in the description and the relevant background art disclosed therein is not briefly discussed (Rule 5.1(a)(ii)).